THE GENUS *ALEUROCYSTIS*

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ABSTRACT: The genus *Aleurocystis* is discussed and the two accepted species are described and illustrated.

KEY WORDS: *Aleurocystis*, Basidiomycetes, Corticiaceae.

RÉSUMÉ: Le genre *Aleurocystis* est discuté et les deux espèces connues sont décrites et illustrées.

MOTS CLÉS: *Aleurocystis*, Basidiomycetes, Corticiaceae.

INTRODUCTION

During work with a synopsis of the genus *Aleurodiscus* (Nunez & Ryvarden, 1997), the name *Aleurocystis* G. Cunn. several times were mentioned in connection with the definition or delimitation of *Aleurodiscus* J. Schroet. A search in the literature revealed that there never had been a comprehensive treatment of species, correctly or wrongly, assigned to *Aleurocystis*. Thus, it seemed desirable to give a survey of this highly characteristic tropical genus, especially since the almost complete lack of manuals for corticoid fungi is a severe restriction for closer studies of these fungi.

ALEUROCYSTIS G. Cunn.
Trans. Roy. Soc. New Zeal. 84: 234, 1956.

Basidiocarp cupulate to resupinate, pale yellow to ocher, annual, gelatinous and tough when fresh, horny and dense when dry, hyphal system monomitic, generative hyphae with clamps, thick-walled in the subiculum and straight to branched, gelatinized in KOH, basidia clavate with 4 sterigmata, metuloid cystidia present, thick-walled, encrusted at least in the upper part, in age also in lower part and more elongated, projecting to enclosed in old basidial layers, paraphysoid hyphae in some cases coming close to dendrohyphidia present in the hymenium, unbranched to slight branched, basidiospores smooth, large, thin-walled and non-amyloid, on dead hardwoods, two species, one pantropical, the other tropical America.

Type species: *Aleurodiscus capensis* Lloyd.

Remarks : The genus is probably not related to *Aleurodiscus,* but specimens are frequently collected and determined as belonging to that genus because of the discoid, scutellate basidiocarp with large basidiospores. The non-amyloid basidiospores and the metuloids will however, immediately exclude it from *Aleurodiscus* where such characters are unknown.

It may be that the genus is related to *Cytidia* and similar genera with which it shares the same type of semigelatinous cupulate basidiocarps and large basidiospores even if this of course may be a result of convergence. It is well known that basidiomycetes that produce basidiocarps in exposed environments as still attached dry branches, have large basidiospores (Ryvarden, 1991). The reason for this is unknown, but as the phenomena occur in several distant groups, it must have an adaptive value. The metuloid cystidia in *Aleurocystis* will however separate the genus from *Cytidia* Quel. and *Auriculariopsis* (Lev.) Maire species of which are rather similar to *Aleurocystis* species in the field.

Whether such metuloid cystidia indicate a different origin from that of the other genera, is debatable as there are many corticoid genera where such organs occur without being taken into account in the definition of the genus. Good examples are *Gloeocystidiellum* Donk, *Hyphoderma* Wallroth, *Peniophora* Cooke and *Phlebia* Fr. In these genera presence or absence of thick-walled metuloid cystidia are only used as a practical and pragmatic tool for separation of species.

KEY TO SPECIES

1. Pantropical species, dendrohyphidia present, spores subglobose, 18-22 × 15-17 µm ..... ***A. hakgallae***
1. American species, dendrohyphidia absent, spores oblong ellipsoid, 20-25 × 12-14 µm. ..... ***A. magnispora***

Aleurocystis hakgallae (Berk. & Broome) G. Cunn. Fig. 1
Trans. Roy. Soc. New Zeal. 84: 235, 1956.
Corticium hakgallae Berk. & Broome, J. Linn. Soc. 14: 72, 1873.
Cytidia cornea Lloyd, Lloyd Mycol. Notes. 47: 656, 1917.
Aleurodiscus capensis Lloyd, Lloyd Mycol. Notes 62: 930, 1920.

Basidiocarps annual, cupulate to discoid, separable, gelatinous and waxy when fresh, horn to cartilaginous and dense when dry, margin curled and turned inward when dry, slightly lifted when fresh, abhymenial surface smooth or with a few scattered hyaline hairs, hymenial surface pale yellow becoming whiter by age, smooth, hymenial layers deep and continuous, sterile subiculum thin and white.

Conidial stage cupulate to disciform, 2-7 mm in diameter, dorsally attached, lower surface smooth, pale buff to tan or slightly tuberculate, margin distinct and raised, outer surface cream to tan, finely tomentose, context dense to cream with numerous groups of condiospores, globose, thick-walled, smooth, non-amyloid, walls up to 3 µm thick, 17-20 µm in diameter.

Hyphal system monomitic; generative hyphae with clamps, thin-walled in the subhymenium, but rapidly gelatinized in KOH and difficult to separate in sections, richly branched, 4-8 µm wide, in the subiculum thick-walled and branched, 3-10 µm wide in the subiculum.

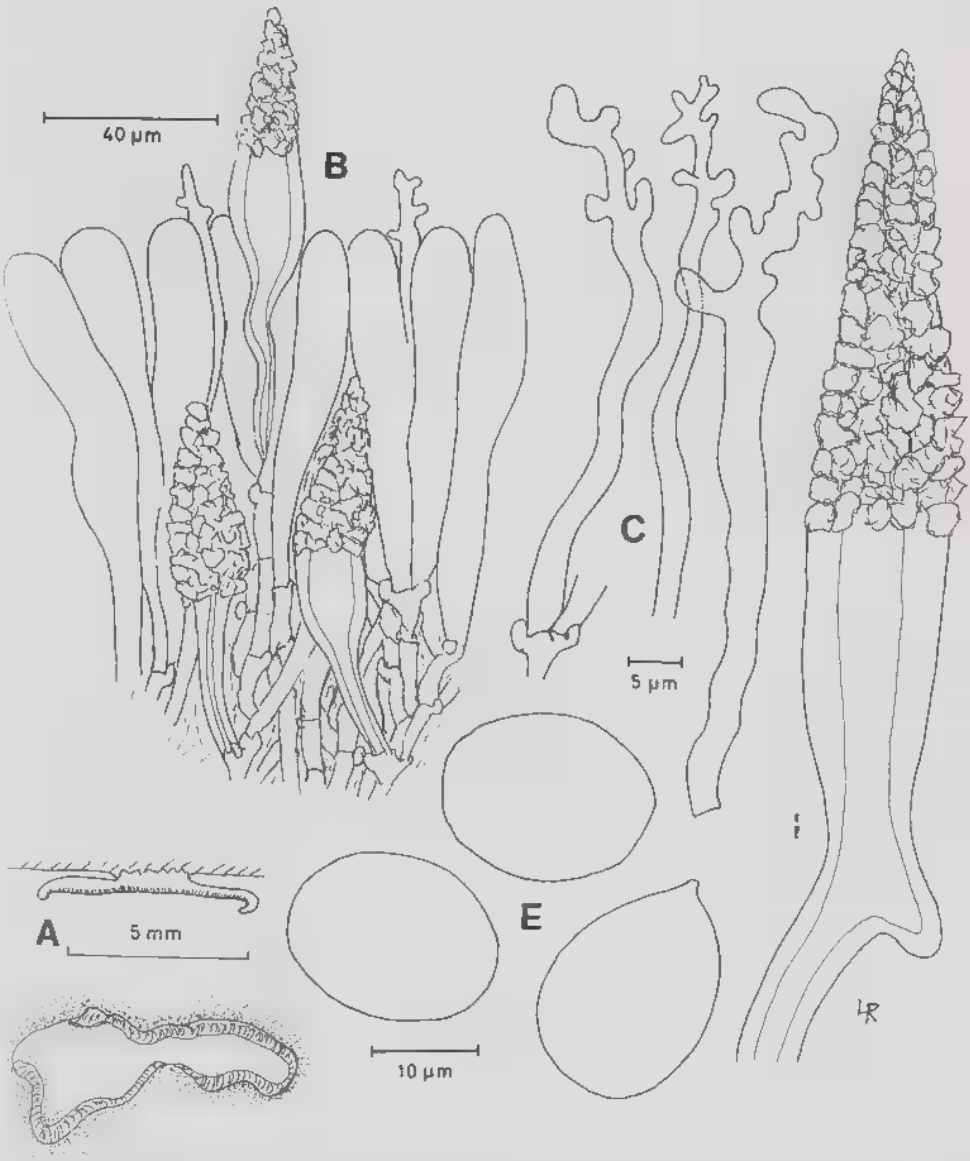

Fig. 1. *Aleurocystis hakgallae* A) Basidiocarp in section and from above, B) Part of hymenium, C) Dendrohyphidia, D) Cystidium, E) Basidiospores. From the holotype of *Aleurodiscus capensis*.

Cystidia present, conical, coarsely encrusted at least in upper part, in lower parts of the hymenial layers encrusted in longer sections, conical to club like in the subhymenium, thick-walled, projecting to embedded in many layers 50-150 µm long, 10-14 µm wide in the middle, usually tapering towards the base.

Dendrohyphidia present, hyphoid and with few blunt and short side branches, up to 65 µm long.

Basidia clavate, 4-sterigmata, 60-90 × 14-20 µm, with a basal clamp.

Basidiospores subglobose, hyaline, smooth, negative in Melzer's reagent, 16-22 × 14-17 µm.

Habitat. On dead hardwoods.

Distribution. Pantropical, but not common.

Remarks. The species reminds about a discoid *Aleurodiscus* or *Cytidia*, but separated easily from these genera by the combination of non-amyloid spores and metuloids cystidia. In the field it may be mistaken for a small jelly fungus because of its gelatinous to waxy consistency.

Specimens studied: South Africa, Natal, 1917, P. van der Byl no 34029, holotype of *Aleurodiscus capensis* Lloyd (BPI); Brazil, Rio Grande do Sul. S. Leopoldo, 1930, J. Rick (K); South Africa, Stellenbosch, 1916, A.V. Duthie 154, holotype of *Cytidia cornea* LLoyd (BPI); Malawi, Mulanje Mts. Lichenya hut. 9. March 1973, R. 11355 (O).

Aleurocystis magnispora (Burt) Lemke Fig. 2
Can J. Bot. 42: 760, 1964.
Stereum magnisporum Burt, Ann. Mo. Bot. Gard. 7: 207, 1920.
Cytidia magnispora (Burt.) Welden, Mycologia 50: 305, 1958.

Basidiocarps annual, cupulate to more widely effused with distinct lifted margin at least in dry condition, reminding about a thin *Stereum* basidiocarp, separable, gelatinous and waxy when fresh, horn to cartilaginous and dense when dry, up to 800 µm thick, abhymenial surface smooth or minutely tomentose, hymenial surface smooth to slightly tuberculate or undulating, deep ochraceous to buff, subiculum thin and white.

Hyphal system monomitic; generative hyphae with clamps, thin-walled in the subhymenium, but rapidly gelatinized in KOH and difficult to separate in sections, richly branched, 4-8 µm wide, in the subiculum thick-walled and branched, often with apparent simple septa because the clamp connections are gelatinized, in swollen parts up to 20 µm wide.

Cystidia present, conical, coarsely encrusted, at least in upper part, in lower parts of the hymenial layers encrusted in longer sections, conical to club like in the subhymenium, thick-walled, projecting to embedded in many layers, 50-100 µm long, 15-20 µm wide in the middle, usually tapering towards the base.

Dendrohyphidia absent.

Basidia clavate, 4-sterigmata, 60-90 × 14-20 µm, with a basal clamp.

Basidiospores ellipsoid, hyaline, smooth, negative in Melzer's reagent, 13-15 × 22-25 µm.

Habitat. On dead hardwoods.

Distribution. Neotropical, but rare, we have seen specimens from Colombia, and Jamaica.

Remarks. The species comes close to *A. hakgallae*, but is separated partly by distribution, but above all by far more ellipsoid spores and the lack of dendrohyphidia.

Specimens studied: Jamaica, Chester Vale, W.A. & E. L. Murrill 328, holotype (NY); Colombia, Bogota, Cundinmarcha, 16 km west on road to Medellin, 2700 m.a.s.l. 3. June 1978 Ryv. 15573 (O).

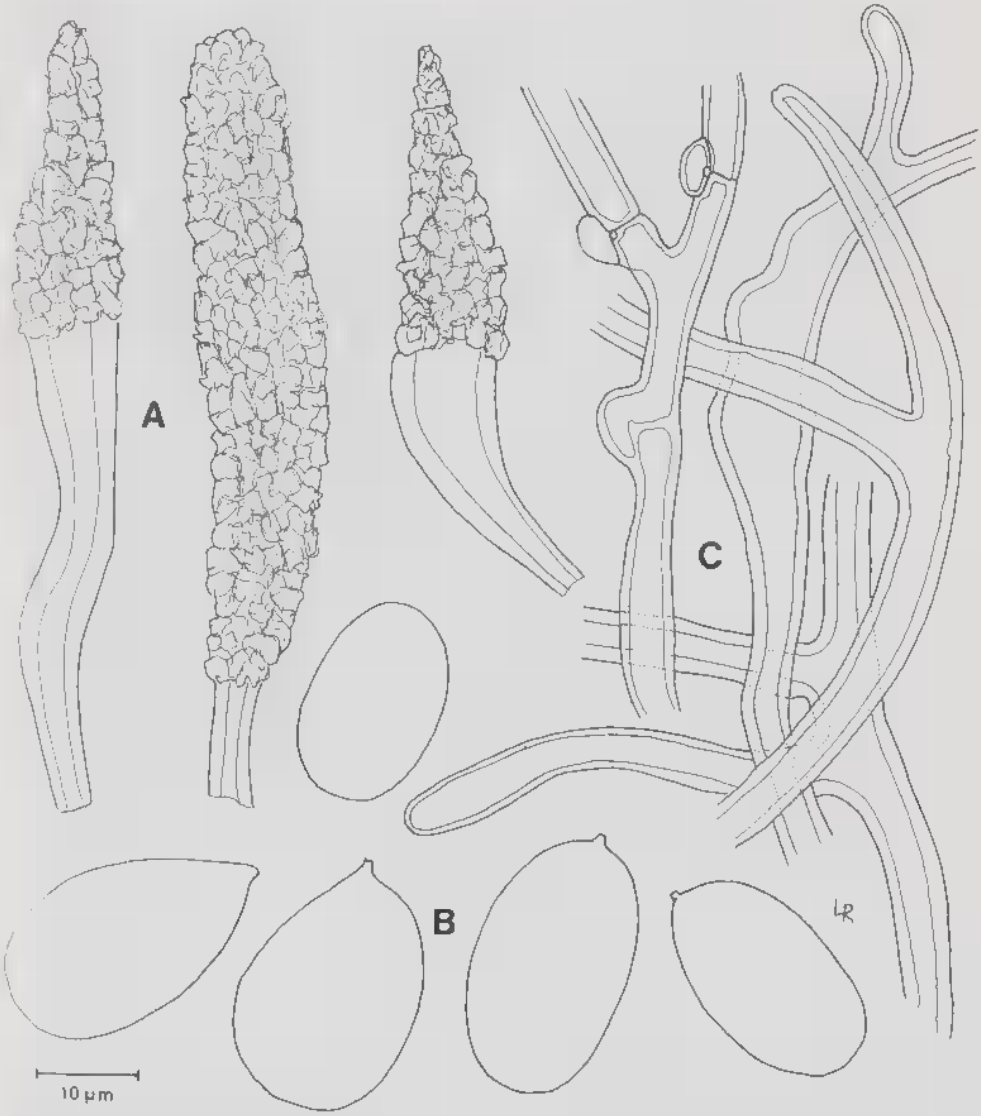

Fig. 2. *Aleurocystis magnispora* A) Cystidia, B) Basidiospores, C) Generative hyphae from the subiculum. From Ryvarden 15573.

LITERATURE CITED

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